



**The Commonwealth of Massachusetts
Massachusetts Water Resources Commission**

Water Conservation Plan for Public Water Suppliers

Effective date: July 13, 2000

Enclosed is a form for a Water Conservation Plan for Public Water Suppliers. The questions raised in the plan have all been identified as important components of a successful Water Conservation and Demand Management Program. When completing this form please keep the following issues in mind:

- The Water Conservation Plan should describe all measures to conserve water that have been completed, are in progress or programmed for future implementation. Give dates when the program was initiated or is expected to begin and explain whether or not it is an on-going or one-time program.
- If necessary, expand responses beyond the space provided and reference or attach appropriate reports or responses.
- For more information on the specific requirements for water conservation in Massachusetts refer to the Water Conservation Standards for the Commonwealth of Massachusetts developed and approved by the State Water Resources Commission. These are available from Mike Gildesgame at the Department of Environmental Management, Office of Water Resources (617) 973-8755.
- Also note that projects requiring an Interbasin Transfer (IBT) approval are subject to specific water conservation performance standards that must be made prior to being able to receive an approval. IBT performance standards are available by contacting Michele Drury at the Department of Environmental Management, Office of Water Resources (617) 973-8745.
- This plan should be completed by
 - water suppliers interested in planning for demand management
 - water suppliers planning a new water source
 - those applying for a Water Management permit application, permit amendment or permit transfer with the Department of Environmental Protection
 - those undergoing a 5 Year Review of their existing Water Management Act permit by the Department of Environmental Protection
 - those requesting new or updated water needs forecasts from the Department of Environmental Management, Office of Water Resources
 - those applying for an Interbasin Transfer Approval with the MA Water Resources Commission.



The Commonwealth of Massachusetts
Massachusetts Water Resources Commission

Water Conservation Plan for Public Water Suppliers

PLEASE TYPE OR PRINT

Water Supply Agency/Company Name: _____

Street: _____ City/Town: _____ Zip Code: _____

Contact person/Title : _____ Telephone number: () _____

PWS ID#: _____ Date completed _____

*Please answer **each of the following questions** by*
- circling **Yes** or **No**
- checking items that apply
- making comments in the space provided, or on
attached documentation where referenced

A. General Information:

1. Residential Population served: _____ Number of service connections: _____

2. Please give the volume and percentage of total water used by each type of customer.

	MGD or MGY	%	
a.	_____	_____	Agriculture
b.	_____	_____	Commercial
c.	_____	_____	Industrial
d.	_____	_____	Municipal
e.	_____	_____	Residential
f.	_____	_____	Sales to other public water suppliers
g.	_____	_____	Process water, including bleeders, water main flushing, filter backwash, etc. where these uses can be confidently estimated. In the case of water use that is "confidently estimated", documentation of how the estimate was arrived at will need to be provided.
h.	_____	_____	Institutional/tax exempt
i.	_____	_____	Unaccounted-for* See Section B for definition
j.	_____	_____	Other: please specify: _____

3. Are the percentages shown above estimates or based on actual meter readings?

4. What is the residential gallons per capita per day (gpcd) for your system? _____

Yes No 5. Do you maintain interconnections with other communities?

Which communities and what is your arrangement (i.e., emergency only, on request, at any time...) with that community?

Community: _____ Arrangement: _____

Community: _____ Arrangement: _____



The Commonwealth of Massachusetts
Massachusetts Water Resources Commission

- Yes No** 6. Do you have interconnections planned with other communities?
- a. With which community(ies)? _____
- b. When will interconnections be completed for each? _____
- c. What is the planned arrangement with that community(ies)? _____

- Yes No** 7. Do you regularly conduct a water audit* of your system to determine where water can be saved and the effectiveness of existing water conservation practices?
- How often? _____
- If yes, **describe in detail** the tasks and results of your most recent audit, including dates the audit began and finished.*
- If no, **provide a schedule** for implementing such an effort. Your schedule should describe who will conduct the audit, a plan for conducting the audit, and a start and end date for the audit. Use additional pages as needed.*

** As defined by American Water Works Association, "A water audit identifies how much water is lost and what that loss costs the utility. Records and system-control equipment (such as meters) are thoroughly checked for accuracy. The overall system goal of the audit is to help the utility select and implement programs to reduce the distribution-system losses." For more information on conducting a water audit refer to AWWA Manual M36, "Water Audits and Leak Detection- Manual of Water Supply Practices".)*

- Yes No** 8. Have you distributed residential retrofit or water saving devices, or do you have a water savings device rebate program?
- If yes, and residential consumption exceeds 80 gallons per capita day, **describe your efforts to reduce residential consumption**, including the total number and type(s) of devices retrofitted.*

*If no, and your residential gallons per capita day exceeds 80 gpcd, **provide a plan** describing the immediate implementation of such a residential retrofit or rebate program. The plan should include dates for implementation and the expected cost per year of the program. (Please note that projects requiring interbasin transfer approval will be subject to more rigorous review.)*

- Yes No** 9. Have water saving devices been installed in public buildings?

Describe your efforts, including location(s), and the number and type of devices replaced, and a **plan and schedule** for installing those devices in any buildings not currently retrofitted. If no, **describe in detail a plan and schedule** for installing such devices, including the dates proposed for each facility



The Commonwealth of Massachusetts
Massachusetts Water Resources Commission

10. Describe any other conservation efforts you are undertaking or planning to undertake: _____

11. What is approximate cost per year of your conservation efforts, including personnel costs \$ _____
What is the funding source(s) for these efforts? _____

B. Unaccounted-for Water Use:

Unaccounted-for water is the difference between water pumped or purchased and water that is metered or confidently estimated. Unaccounted-for water should include master meter inaccuracies, domestic and non-domestic meter underregistration, errors in estimating for stopped meters, overregistration revenue meters, unauthorized hydrant openings, unavoidable leakage, recoverable leakage, illegal connections, standpipe overflows, data processing errors.

Calculation of unaccounted-for water use should be based upon the volumes reported on your Annual Statistical Report filed with The Department of Environmental Protection.

1. Based on the information concerning the percentage of total water used by each type of customer described in Section A, unaccounted-for water is _____%.
2. Describe the "unaccounted-for" water in your system for the last three years, and how you determined it. _____

3. Describe your current and ongoing efforts to lower the Town's unaccounted-for water use. _____

4. Please estimate the percentage of raw water that is lost in treatment, that is: (raw water – finished water)/raw water).
_____.

Yes **No** Is this lost raw water the same as, or counted as, unaccounted-for water?

C. Public Education Program:

- Yes** **No** 1. Do you have a public education program for your customers?
2. Please check which items are included in your public education program:
- a. _____ Bill stuffers. How often mailed?
 - b. _____ Public service announcements (Please circle those used: cable TV radio newspapers, others: _____)
 - c. _____ School materials
 - d. _____ Speakers for community groups
 - e. _____ Conservation information center



The Commonwealth of Massachusetts
Massachusetts Water Resources Commission

- f. ☐ Public space advertising
 - g. ☐ Information on lawn care, gardening, and outdoor water use
 - h. ☐ Demonstration gardens for xeriscaping
 - i. ☐ Industrial or Commercial Conservation
 - j. ☐ Bills which compare current use with use during the same period last year
- Comments/Other: _____

3. Describe in detail your efforts to implement each of the above checked items.
How often does each item get implemented?:

4. Describe what you perceive as the successes and/or failures of your public education program:

- Yes No** 5. Do you regularly contact large industrial, commercial, institutional users to encourage conservation? Describe your efforts:

D. Leak Detection and Repair:

- Yes No** 1. Do you have a full leak detection program for your distribution system every two years?
- a. *If yes*, when was the last full survey completed? _____
Attach the results or a summary of that survey which includes: who conducted the survey, miles of main surveyed, # of leaks found, estimated water loss, leaks repaired, date repaired, and the estimated water savings;
 - b. When is the next full survey scheduled? _____
 - c. If no survey is scheduled, how often is a 100% leak detection survey of the distribution system completed? _____
 - d. *If no*, have you ever conducted a full leak detection survey for your distribution system? When was the last survey completed? _____

- Yes No** 2. Do you include leak detection/repair as an expense of the water system?

- Yes No** 3a. Do you have funds set aside for regular maintenance?

- Yes No** 3b. Do you have funds set aside for emergency repairs?

- 3c. Provide an estimate on how much is spent on leak detection and repairs annually or per survey? \$



The Commonwealth of Massachusetts
Massachusetts Water Resources Commission

(per year or survey)



E. Metering:

1. What percent of your total service accounts are metered? _____ %.
- 2a. List the number of operable meters in your system? _____
- Yes No 2b. Does your community allow the installation of a second water meter for outside water use only?
- Yes No 2c. If yes, does this above number reflect those meters?
- Yes No 2d. Are these billed at a different rate? Explain: _____
- _____
- Yes No 3. Are meters easily accessible for water system personnel to read?
4. List the percentage of users metered by category:
- | | | |
|---------------------|--------------------|--------------------|
| Residential _____ % | Industrial _____ % | Commercial _____ % |
| Public _____ % | Other _____ % | |
- Yes No 5. Are all public buildings metered? If not, list those not metered.
- _____
- Yes No 6. Are public buildings billed for the their water use?
7. If you are not 100% metered for all users (including public buildings), **develop a plan** for installing meters in 100% of your system within 2 years. Describe your installation plan, including the number of services remaining to be metered, public buildings remaining to be metered, and an annual schedule for metering those remaining services:
- _____
- Yes No 8. Do you have a regular metering program? If yes, check which items you include:
- | | |
|----------------------|------------------------------|
| a. _____ Repairs | d. _____ Calibration |
| b. _____ Testing | e. _____ Check for tampering |
| c. _____ Replacement | f. _____ Other |
- Yes No 9. Are your master meters calibrated annually?
- a. *If yes*, by whom _____
- b. Provide the most recent date each master meter has been calibrated: _____
- c. *If no*, how often? _____
10. How often are residential meters read? _____ replaced? _____
11. How often are large user (2" or larger) meters tested or calibrated? _____
- Yes No 12. Do you meter water from hydrants used by contractors for pipe flushing and/or construction?
- Yes No Do you bill for this use?
- Yes No 13. Do you use an automatic meter reading system?
- Yes No a. *If not*, do you plan to install one?
- b. *If yes*, by when? _____
- Yes No 14. Do you have funds set aside for regular meter repair and replacement? Provide an estimate on how much is spent annually on meter repair and replacement? \$ _____



F. Pricing:

Yes **No** 1. Are water supply system operations fully funded by water supply system revenues?

If yes, when did full funding become effective?

2. Which of the following items are covered by the price of water charged to customers?

- a. _____ Watershed purchase/protection
- b. _____ Well site purchase/protection
- c. _____ Distribution system operation
- d. _____ Capital depreciation account
- e. _____ Aquifer land acquisition
- f. _____ Capital replacement/depreciation fund
- g. _____ Staff benefits package
- h. _____ Treatment and associated treatment plant costs
- i. _____ Purchase/installation of water conservation devices
- j. _____ All aspects of the education program
- k. _____ Staff training/professional development
- l. _____ Leak detection
- m. _____ Pumping
- n. _____ Maintenance
- o. _____ Hiring of staff
- p. _____ Leak repairs
- q. _____ Debt service
- r. _____ Electricity/fuel
- s. _____ All of the above

2. Please check the type of rate structure your system uses:

- a. _____ Flat rate b. _____ Increasing block c. _____ Decreasing block
- d. _____ Seasonal e. _____ Other rate (please explain)

Yes **No** 3. Are bills based on actual meter readings?

Yes **No** 4. Do the bills compare current use with use during the previous period and the same period last year?

Yes **No** 5. Is the volume of water used stated on the bill in gallons?

6a. How often are bills sent to residential customers? Water _____

Sewer _____

6b. How often are bills sent to large users (2" meters or larger)? Water _____

Sewer _____

Yes **No** 7. Is your rate structure regularly evaluated?

How often? _____

When was your rate last changed? _____

8. Describe or attach a copy of your current pricing level(s) for water & sewer (price charged for a given volume of water and sewer)?

WATER
\$ _____ per _____

SEWER
\$ _____ per _____



G. Demand Management and Emergency Planning:

Yes **No** 1. Do you have a written plan describing water use reduction targets? Is this for use only during water supply emergencies, or are there year-round goals? _____ Emergencies only _____ Year-Round

Yes **No** 2. Do you have an outside water use restriction bylaw?

Yes **No** Is it based on the DEP model bylaw?

Yes **No** 3. Do you have any other bylaws or restrictions which may control water use (for example, a municipal bylaw which restricts installation of irrigation wells or automatic sprinkler systems). Please describe:

Yes **No** 4. Do you have a plan describing procedures for handling water emergencies?
If yes, describe the existing emergency plans:

Yes **No** 5. Do you have a Drought Management Plan?
If yes, describe your plan: _____

Yes **No** 6. Do you have a written procedure which outlines which users will be cut back, what emergency measures will be implemented, which trigger points require action, and how much will be cut back in the event of a water emergency or Drought? *If yes, please attach.*

Yes **No** 7. Does your system currently have the ability to implement and enforce outside water use restrictions? If yes, briefly describe your ability to implement such restrictions, including the frequency with which such restrictions have been implemented the past five years, and the thresholds used to determine when such restrictions are implemented:

8. Describe any other efforts your system has taken to evaluate and control your long-term water supply needs or demand management planning you have done:



The Commonwealth of Massachusetts
Massachusetts Water Resources Commission

9. When was the last time you needed to implement water restrictions or water bans? _____

10. What actions were taken at that time? How long were these measures in place? _____

Certification:

I certify, under penalty of law, that the responses provided and all attachments were prepared under my supervision, in accordance with a system designed to ensure that qualified personnel properly gathered and evaluated the information submitted. The information submitted is, to the best of my knowledge and belief, true, and accurate and complete.

Signature

Title

Date